UNCONSOLIDATED AQUIFER SYSTEMS OF GIBSON COUNTY, INDIANA

Gibson County Unconsolidated Aquifer Systems

Nine unconsolidated aquifer systems have been mapped in Gibson County: the Dissected Till and Residuum; the Alluvial, Lacustrine, and Backwater Deposits; the Buried Valley; the Pre-Wisconsin Drift; the Wabash River and Tributaries Outwash; the Wabash River and Tributaries Outwash Subsystem; the White River and Tributaries Outwash; the White River and Tributaries Outwash Subsystem; and the Coal Mine Spoil. The first eight aquifer systems comprise sediments that were primarily deposited by (or resulted from) glaciers and their meltwaters, or are thin, eroded residuum (a product of bedrock weathering). Boundaries of these aquifer systems are often gradational and individual aquifers may extend across aquifer system boundaries. The Coal Mine Spoil Aquifer System is man-made and the larger area boundaries are well defined.

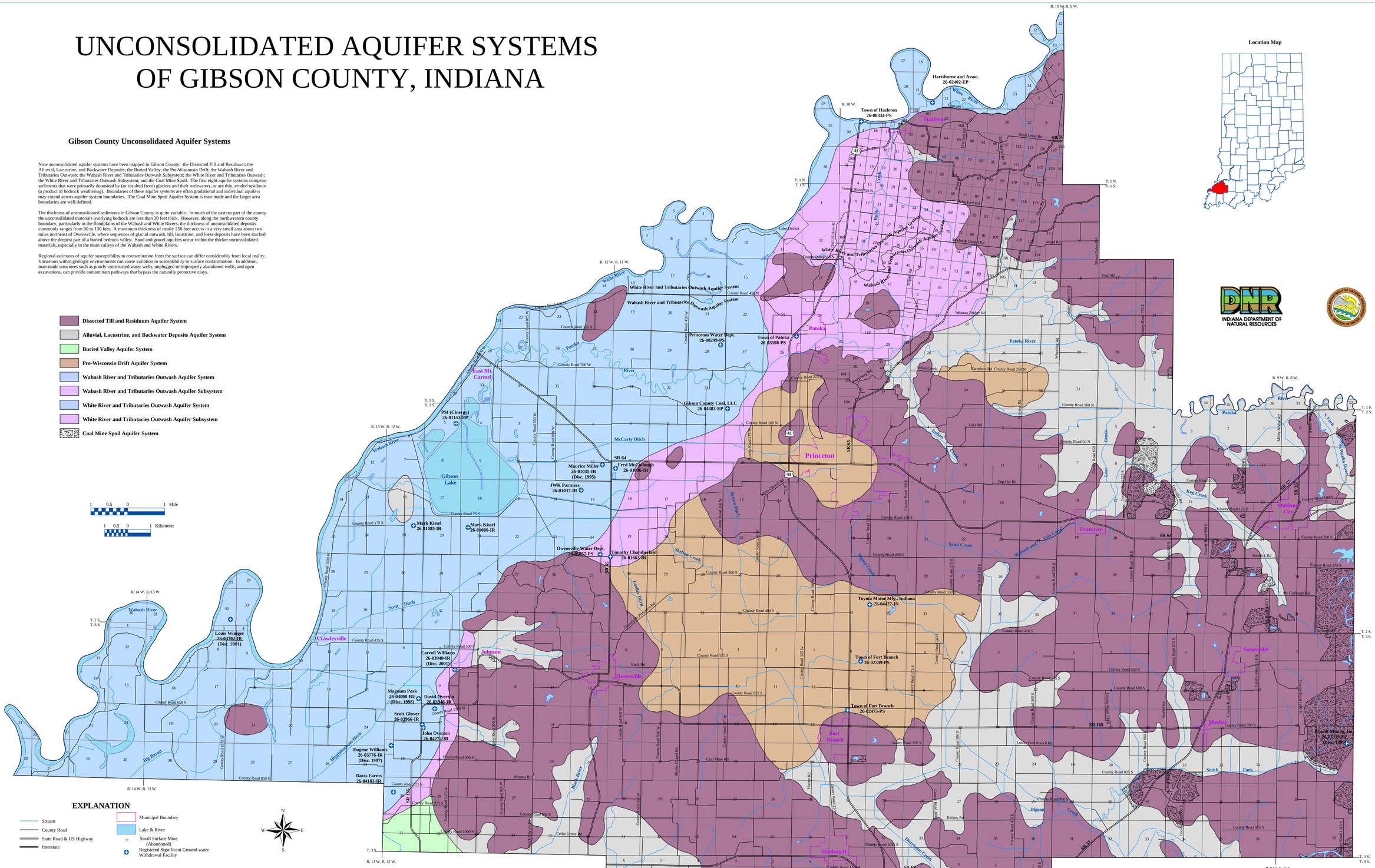
The thickness of unconsolidated sediments in Gibson County is quite variable. In much of the eastern part of the county the unconsolidated materials overlying bedrock are less than 30 feet thick. However, along the northwestern county boundary, particularly in the floodplains of the Wabash and White Rivers, the thickness of unconsolidated deposits commonly ranges from 90 to 130 feet. A maximum thickness of nearly 250 feet occurs in a very small area about two miles northeast of Owensville, where sequences of glacial outwash, till, lacustrine, and loess deposits have been stacked above the deepest part of a buried bedrock valley. Sand and gravel aquifers occur within the thicker unconsolidated materials, especially in the main valleys of the Wabash and White Rivers.

Regional estimates of aquifer susceptibility to contamination from the surface can differ considerably from local reality. Variations within geologic environments can cause variation in susceptibility to surface contamination. In addition, man-made structures such as poorly constructed water wells, unplugged or improperly abandoned wells, and open excavations, can provide contaminant pathways that bypass the naturally protective clays.

- **Dissected Till and Residuum Aquifer System**
- **Alluvial, Lacustrine, and Backwater Deposits Aquifer System**
- **Buried Valley Aquifer System**
- **Pre-Wisconsin Drift Aquifer System**
- **Wabash River and Tributaries Outwash Aquifer System**
- **Wabash River and Tributaries Outwash Aquifer Subsystem**
- **White River and Tributaries Outwash Aquifer System**
- **White River and Tributaries Outwash Aquifer Subsystem**
- **Coal Mine Spoil Aquifer System**

1 0.5 0 1 Mile

1 0.5 0 1 Kilometer



Map Use and Disclaimer Statement

We request that the following agency be acknowledged in products derived from this map: Indiana Department of Natural Resources, Division of Water.

This map was compiled by staff of the Indiana Department of Natural Resources, Division of Water using data believed to be reasonably accurate. However, a degree of error is inherent in all maps. This product is distributed "as is" without warranties of any kind, either expressed or implied. This map is intended for use only at the published scale.

This map was created from several existing shapefiles. Surface Coal Mines in Southwestern Indiana (polygon shapefile, 20001207), Township and Range Lines of Indiana (line shapefile, 20020621), Land Survey Lines of Indiana (polygon shapefile, 20020621), and County Boundaries of Indiana (polygon shapefile, 20050621) were all from the Indiana Geological Survey and based on a 1:24,000 scale. Populated Areas in Indiana 2000 (polygon shapefile, 20021000) was from the U.S. Census Bureau and based on a 1:100,000 scale. Draft road shapefiles, System1 and System2 (line shapefiles, 2003), were from the Indiana Department of Transportation and based on a 1:24,000 scales. Streams27 (line shapefile, 20000420) was from the Center for Advanced Applications in GIS at Purdue University. Unconsolidated Aquifer Systems coverage (Schrader, 2003) was based on a 1:24,000 scale.

Map generated by Jennifer Mc Millan
IDNR, Division of Water, Resource Assessment Section
September 2003

Unconsolidated Aquifer Systems of Gibson County, Indiana

by
Gregory P. Schrader
Division of Water, Resource Assessment Section

September 2003